

CLAIMS

Claims 1-31 (cancelled)

Claim 32 (Currently Amended): A composite comprising:

a sandwich structure comprising at least two surface layers attached to a central layer of rigid epoxy foam wherein the layer of epoxy foam comprises:

- i. from about 15% to about 65% by weight epoxy resin;
- ii. is at least 1.5 times the combined thickness of the two surface layers; and
- iii. has a density of from 0.2 to 1.5 gram/cc;

wherein the resulting composite has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa; and

wherein the at least two surface layers are ~~matching an internal tube structure located inside of an and external tube structure~~[[s]], and the internal tube structure cross-section of the at least two surface layers are is hollow tubes; and

wherein the epoxy foam is embedded in the two surface layers.

Claim 33 (Previously Presented): A composite according to claim 32 in which the foam has a density of between 0.4 and 1.5 gram/cc.

Claim 34 (Currently Amended): A composite according to claim 32 in which the surface layers are a metal foil ~~such as aluminium~~ made of aluminum or steel [[foil]].

Claim 35 (Previously presented): A composite according to claim 32 in which the surface layers are porous, fibrous, or both.

Claim 36 (Currently Amended): A composite according to claim 32 in which the surface layers are fibrous and the fibres are carbon fibre, glass fibre, or ~~Kevlar~~ aramid fibre

Claim 37 (Cancelled):

Claim 38 (Cancelled):

Claim 39 (Currently Amended): A composite according to claim 32, wherein the internal tube structure and the external tube structure are in which the surface layers are concentric tubes.

Claim 40 (Currently Amended): A composite according to claim 32 in which the surface layers are made of a metal that includes aluminum.

Claim 41 (Cancelled):

Claim 42 (Previously Presented): A composite according to claim 32 in which the composite is part of a construction building or a transportation vehicle.

Claim 43 (Currently Amended): A composite according to claim 42 in which the composite is ~~configured to provide~~ reinforcement against crash in vehicles against a crash.

Claim 44 (Currently Amended): A composite according to claim 43 in which the composite is ~~configured to provide~~ reinforcement to an automobile door ~~reinforcement.~~

Claim 45 (Currently Amended): A composite according to claim 32 in which the composite is ~~configured to provide~~ strength in a sporting good.

Claim 46 (Currently Amended): A composite comprising:

a sandwich structure comprising:

at least two surface layers attached to a central layer of rigid epoxy material
~~foam~~ wherein the layer of epoxy material ~~foam~~ comprises:

- a) from about 15% to 65% by weight epoxy material ~~resin~~,
- b) is at least 1.5 times the combined thickness of the two surface layers,
and
- c) the ~~foam~~ epoxy material has a density of from 0.3 to 0.6 gram/cc,
wherein:

i. each of the at least two surface layers has a thickness of from 0.2 to 10 millimeter[[e]]s and the central layer of ~~a rigid epoxy material~~ foam has a thickness of from 2 to 200 millimetres;

ii. the composite has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa;

iii. the composite has a density of from 0.1 to 1 gram/cc;

iv. the surface layers are ~~matching~~ internal and external structures; and

v. ~~the cross-section of~~ the surface layers are an internal tube structure located inside of an external tube structure and the internal tube structure is hollow tubes;

wherein the epoxy material is embedded in, and optionally through, the two surface layers.

Claim 47 (Currently Amended): A composite according to claim 46 in which the surface layers are a [[of]] metal foil ~~such as aluminium~~ made of aluminum, [[or]] steel foil, or plastic film, or sheeting, made of ~~such as polypropylene, [[or]] polyethylene film, or polyethylene terephthalate film.~~

Claim 48 (Previously Presented): A composite according to claim 46 in which the surface layers are porous, fibrous, or both.

Claim 49 (Cancelled):

Claim 50 (Cancelled):

Claim 51 (Cancelled):

Claim 52 (Currently Amended): A composite according to claim 32, wherein the internal tube structure and the external tube structure are concentric and are made of ~~in which the surface layers are carbon fibre formed as concentric tubes.~~

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Claim 53 (Currently Amended): A composite according to claim 46, wherein the internal tube structure and the external tube structure are concentric and are made of ~~in which the surface layers are carbon fibre formed as concentric tubes.~~

Claim 54 (Currently Amended): A composite according to claim 32, in which the surface layers are a plastic film or sheeting ~~such as~~ made of polypropylene, ~~[[or]]~~ polyethylene film, or polyethylene terephthalate film.

Claim 55 (Previously Presented): A composite according to claim 32, wherein the central layer of rigid epoxy foam has a thickness from 5 mm to 15 mm.

Claim 56 (Previously Presented): A composite according to claim 32, wherein the two surface layers are made of different materials.

Claim 57 (Cancelled):

Claim 58 (New): A composite according to claim 44, wherein all of the at least two surface layers are encased with the epoxy foam.